

REMARKS

The applicants appreciate the Examiner's thorough examination of the Application and request reexamination and reconsideration of the Application in view of the following remarks.

The Examiner rejects claims 1 and 25-27 under 35 USC §102(e) as being anticipated by Raghavan (U.S. Patent No. 6,415,003). The Examiner alleges that Raghavan discloses each and every element of the applicants' invention.

The applicants' claimed calibration system for a communications system compensates for the unpredictable transfer function due to component mismatches and parasitic elements with a calibration system that is responsive to an altered reference signal of the transmitter circuit and adjusts the reference signal level of at least one of the transmitter and receiver circuits to compensate for variations in the transmission signal due to the transfer function of the transmission medium.

The claimed calibration system for a communications system as recited in claim 1 includes: 1) a transmitter circuit, 2) a receiver circuit, 3) a transmission medium having a transfer function for transmitting a transmission signal between said transmitter and receiver circuits; and 4) a calibration circuit responsive to an altered reference signal of said transmitter circuit altered by the transmission medium for adjusting the reference signal level of one of said transmitter and receiver circuits to compensate for variations in the transmission signal due to said transfer function.

The claimed calibration system for a communications system as recited in claim 1 uses a calibration circuit responsive to an altered reference signal of the transmitter circuit to adjust the reference signal level of either the transmitter or receiver circuit to compensate

for variations in the transmission signal. During a calibration cycle of the claimed communication system, the transmitter circuit sends a predefined signal through the transmission medium. The predefined signal is altered when the transmitter circuit transmits the signal through the transmission medium before it is received by the receiver circuit. The calibration circuit uses the digital output of the receiver circuit to adjust the reference signal level of either the transmitter or receiver circuit, such as reference signal level 28 as shown in Fig. 1 of the applicants' specification which is supplied to receiver circuit 16. Therefore, the claimed calibration circuit adjusts the reference signal level of either the transmitter or receiver circuits to compensate for the unpredictable gain of the transfer function of the transmission medium. See the applicants' specification at page 9, lines 13-14.

In contrast, Raghavan teaches and discloses that the output signal stream from the transmission channel, which is an input symbol sequence, is input to an anti-aliasing filter of the receiver. The anti-aliasing filter prevents anti-aliasing by passing the input signal received from the transmission to a low pass filter that rejects out-of-band noise. An analog to digital converter (ADC) samples and holds the input signal and converts the analog signal to a digital signal. The digitized output signals from the ADC are then corrected by subtracting a baseline wanderer correction in an adder circuit and amplified by an amplifier circuit, e.g., amplifier 201, which compensates for the loss of signal that is experienced in the transmission channel. The gain, g , of amplifier 201 is then adjusted by the alleged calibration circuit, or gain control 208, in order to optimize the receiver function. *See* Col. 5, line 62 - Col. 6, line 26.

The alleged calibration circuit (gain control 208) is responsive to the modulus of sample a_k with a target threshold value that is output by equalizer 204. The alleged calibration circuit (gain control 208) adjusts the gain of amplifier 201 by comparing the modulus of the sample with the target threshold value. The gain of amplifier 201 compensates for the channel flat loss factor $1/g$. *See* Col. 7, lines 22-25.

As shown above, Raghavan does not teach, suggest, or disclose each and every element of the applicants' invention, namely, a calibration circuit responsive to an altered reference signal of the transmitter circuit altered by the transmission medium for adjusting the reference signal level of one of the transmitter and receiver circuits to compensate for variations in the transmission signal due to the transfer function.

Accordingly, claim 1 is patentable and allowable under 35 USC §102(e) over Raghavan. Because claims 25-27 depend from an allowable base claim, claims 25-27 are allowable under 35 USC §102(e) over Raghavan.

The Examiner rejects claim 3 under 35 USC §102(e) as being anticipated by, or under 35 USC §103(a) as being unpatentable by, Raghavan. As shown above, Raghavan does not teach and disclose each and every element of the applicants' invention as recited in claim 1. Because claim 3 depends from an allowable claim 1, the Examiner's rejection of claim 3 is traversed.

The Examiner rejects claims 4, 6, 8, and 31-34 under 35 USC §103(a) as being unpatentable over Raghavan in view of Hoekstra (U.S. Patent No. 5,883,907). The Examiner also rejects claims 5 and 9 under 35 USC §103(a) as being unpatentable over Raghavan in view of Hoekstra, and further in view of Salinger (U.S. Patent No. 6,304,594). As shown above, Raghavan does not teach, suggest or disclose each and every element of

the invention as recited in Applicants' claim 1. Because claims 4, 5, 6, 8, 9, and 31-34 depend from an allowable base claim, claims 4, 5, 6, 8, 9, and 31-34 are allowable and patentable under 35 USC §103(a).

Each of the Examining Attorney's rejections has been addressed or traversed. Accordingly, it is respectfully submitted that the application is in condition for publication. Early and favorable action is respectfully requested.

If for any reason this Response is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned or his associates collect in Waltham, Massachusetts, at (781) 890-5678.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'RJC', written over a horizontal line.

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